

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554**

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**FEDERAL COMMUNICATIONS COMMISSION
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In the Matter of)
Annual Assessment of the Status of)
Competition in the Market for the)
Delivery of Video Programming)

CS Docket No. 96-073

COMMENTS OF GENERAL INSTRUMENT CORPORATION

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July 19, 1996

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SUMMARY

General Instrument Corporation (GI) is a leading developer and manufacturer of end-to-end system solutions for the secure and interactive delivery of video, voice and data. For cable TV services, GI produces systems to encode and decode signals, including headend equipment and subscriber set-top boxes for both analog and digital systems, while our subsidiary CommScope produces more than 50% of the world's coaxial cable. GI is the largest manufacturer serving C-band (direct-to-home) satellite subscribers and our encryption technology is used in both C-band and direct broadcast satellite (DBS) systems. In addition to our traditional cable and satellite businesses, GI produces equipment for the growing multichannel multipoint distribution service (MMDS) market and GI's recent purchase of Next Level Communications (NLC) marks our entry into the switched digital video market.

GI develops systems for a full range of communications companies offering video through numerous differing technologies. GI believes that technological advances in the systems used for delivery of video programming coupled with the recent passage of the Telecommunications Act of 1996 will enlarge and make more competitive all markets involved in the delivery of video programming. Advances in digital technology, including video compression, encryption and data transmission, will force video programming providers to compete not only on price and customer service, but on system offerings as well.

including superior video and audio quality, channel capacity, Internet access, e-mail, interactive programming guides and video-on-demand.

GI believes that technology will continue to drive competition and that the Commission therefore should avoid regulation of telecommunications technologies and allow market forces to operate. When regulations are required, the Commission should strive to adopt pro-competitive rules that will promote the rollout of advanced telecommunications equipment and services.

As the Commission navigates through proceedings in this competitive environment, GI urges the Commission to be mindful that:

- A competitive, non-regulated marketplace for video programming and equipment will lead to continued innovation, industry set standards and more rapid introductions of new, advanced services
- When the Commission must enact rules, it should strive to ease the regulatory and financial burdens of introducing advanced equipment to consumers and entice operators to upgrade their networks.
- In mandating the retail sale of equipment used to access video programming services, two important points to remember are that the market for video equipment is already competitive and becoming more so and that signal security is critical to the viability of any video delivery system.

**Before the
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In the Matter of)	
)	
Annual Assessment of the Status of)	CS Docket No. 96-133
Competition in the Market for the)	
Delivery of Video Programming)	

COMMENTS OF GENERAL INSTRUMENT CORPORATION

General Instrument Corporation (GI) submits these comments in response to the Commission's Notice of Inquiry, released June 13, 1996, in the above-captioned proceeding. GI urges the Commission to recognize that technological advances in telecommunications equipment enhance competition in the marketplace for video programming delivery. Thus, the Commission should leave regulation of the equipment market to marketplace forces and encourage the involvement of industry standards-setting groups. When government rules must be enacted, the Commission should strive to adopt rules that ease the regulatory and financial burdens on video service providers, as well as equipment providers, as they attempt to deploy advanced telecommunications capabilities.¹

¹ "Advanced telecommunications capability" is defined as any high-speed, switched, broadband, telecommunications capability that enables users to originate and receive high-quality voice, data, graphics, and video telecommunications using any technology. H.R. Rep. No. 458, 104th Cong., 2d Sess. at 102. Addressable, hybrid fiber/coax systems and switched digital video systems provide such capability.

I. Technological advances, especially in the area of digital video and data, will continue to enhance competition in the marketplace for the delivery of video services by encouraging new entrants and delivering new services.

Digital technology has made tremendous advances and now is certain to have an important and lasting effect on competition in the delivery of video programming. The convergence of the television, computer and consumer electronics industries has begun and is being driven by the use of digital technology. Increasing use of broadband networks is speeding the creation of the National Information Infrastructure, thereby promoting expressed policies of the Federal government over the last decade or more. The recent passage of the Telecommunications Act of 1996 also is accelerating convergence of the communications industries, especially in the area of video programming delivery.

Companies entering the video delivery business have chosen a variety of technologies to bring their services to subscribers, and have made particular use of digital formats. Digital cable television service is scheduled for launch in October of this year. Direct broadcast satellite (DBS) services exclusively use digital compression and encryption technology and this technology is being added to DTH satellite delivery systems. Digital multichannel multipoint distribution service (MMDS), also known as "wireless cable," offers a high number of channels and the ability to offer ancillary data services at relatively low deployment costs. Many companies looking to enter the business of video delivery, such as traditional telephone companies and utilities, are choosing the

MMDS route, although several telephone companies have shown a willingness to experiment with different architectures.

AT&T has invested in DirecTV and will help to market the service. MCI paid the government \$682 million for the last U.S. full-CONUS orbital slot and plans to put a DBS satellite into orbit. Ameritech and US West are buying cable franchises.² BellSouth just completed a six-month, in-region technology trial of digital local multipoint distribution service (LMDS) which offered 160 video channels and 32 video-on-demand channels.³

All of these systems, whether already existing, being built from scratch or based on upgrades of the current network, require that subscribers have the necessary equipment for accessing the video service. As competition in the video delivery marketplace grows, subscriber equipment plays an increasingly important part in promoting this competition. Systems that can offer advanced features at low prices, such as cable modems, video-on-demand or interactive programming guides, have a competitive edge. Differing equipment and features allow systems to compete beyond price and customer service.

II. The Commission should avoid regulations affecting telecommunications equipment and let the competitive marketplace decide when standards are necessary. When the Commission must act, it should strive to be pro-competitive and create incentives for multichannel video programming distributors (MVPDs) to deploy advanced technologies.

² *Cable TV Technology*, No. 223 (Paul Kagan Associates, Inc.), February 29, 1996, at 1.

³ *BellSouth, Texas Instruments Conduct LMDS Trial*, *Telecommunications Reports*, July 8, 1996, at 23.

As competition increases because of technological developments and new manufacturers enter with various hardware offerings, it becomes even more important for the Commission to avoid regulating and setting technical standards for video delivery products. Manufacturers must have incentives for continued research and development without fear of a government mandated standard that will freeze technology. Dramatic new communication technologies are available today that were not on the market only two years ago when the Commission released its first report to Congress on the status of video programming competition.

One interesting outcome of market deregulation and competition is a move toward industry developed, open standards. Interoperability has become crucial to the acceptance of new products. Recognizing this, General Instrument is widely licensing its technology and ensuring that GI's products are compatible with industry adopted standards, including MPEG-2.

This move toward open standards by GI exemplifies why the Commission should, in most cases, leave standard setting to the industry. Consumer demand will drive and shape the market, while allowing new technologies to be tested and marketed. In those cases of on-going competing standards, a government mandated selection will not necessarily achieve a preferable outcome. GI understands the process as a vendor and as a member of several industry standards organizations, such as the Society of Cable

Telecommunications Engineers (SCTE)⁴, the Advanced Television Systems Committee (ATSC), the Digital Audio Visual Council (DAVIC) and the Cable-Consumer Electronics Compatibility Advisory Group (C3AG). The recent decoder interface standard for set-top boxes illustrates the ability of these types of organizations to research and select a standard.⁵

When the Commission must set standards or enact regulations affecting equipment, it should strive to enact rules that will promote further buildout of the National Information Infrastructure, in keeping with Congress' intent in passing the Telecommunications Act of 1996. Indeed, Congress stated the purpose of the bill was "to provide for a pro-competitive, de-regulatory national policy framework designed to accelerate rapidly private sector deployment of advanced telecommunications and information technologies and services to all Americans...."⁶

Both Congress and the Commission have demonstrated support for the rapid and ubiquitous deployment of advanced broadband infrastructures. Recent Commission proceedings will help MVPDs remain competitive by enabling them to more easily introduce new services. For example, the Commission's recent Order on equipment cost aggregation reflects rules crafted to promote development of a broadband, two-way infrastructure; to reduce the

⁴ Within the last year the SCTE has been accepted as a standards-setting organization by the American National Standards Institute.

⁵ See Memorandum Opinion and Order, *In the Matter of Implementation of Section 17 of the Cable Television Consumer Protection and Competition Act of 1992, Compatibility Between Cable Systems and Consumer Electronics Equipment*, ET Docket No. 93-7, FCC 96-129 (released April 10, 1996). General Instrument has filed a Petition for Clarification in this proceeding.

⁶ H.R. Rep. No. 548, 104th Cong., 2d Sess. at 1

cost of advanced technology for consumers; to permit manufacturers to more easily implement technical innovations; and to ease the administrative burdens of cable rate regulation on operators.⁷ The Commission's proceedings to invalidate local restrictions on satellite receiving dishes and antennas will protect operators from local rules which would stifle competition in the video delivery marketplace and deny consumers the benefits of advanced technologies.

When the Commission enacts rules such as these, it encourages manufacturers, like GI, to invest aggressively in research and development, and encourages MVPDs to deploy new technologies on a wide scale. It also increases the likelihood that financial institutions will fund operators seeking to upgrade their networks and introduce new services to subscribers. New technologies benefit consumers, video providers and the nation's telecommunications infrastructure, if they can be brought to market.

III. The Commission must move cautiously in mandating the retail sale of set-top boxes and other consumer premises equipment used to access video programming services.

The Commission has requested information on the commercial availability of equipment used by consumers to access services provided by multi-channel video providers. Recognizing that the Commission plans to initiate a proceeding

⁷ See Report and Order, *In the Matter of Implementation of Section 301(j) of the Telecommunications Act of 1996, Aggregation of Equipment Costs By Cable Operators*, CS Docket No. 96-57, FCC 96-257 (released June 7, 1996).

devoted exclusively to this subject, we will limit our comments here to a brief overview only.

Section 304 of the 1996 Act is likely to be the subject of much contentious argument before the Commission. Nevertheless, there is likely to be agreement that it is at least intended to facilitate an option of consumer ownership of equipment and that such option includes the opportunity to purchase or lease from parties other than the MVPD. In this regard, it is consistent with what we perceive to be the current trends which will result from increased competition between video providers and from advances in technology.

One result will be that the already highly competitive market for MVPD equipment will become more so as new manufacturers enter a potentially expanding market. Such companies as Sun Microsystems and Sony have already announced plans to market access equipment. As MVPDs increasingly require open systems from vendors, as discussed above, this trend will accelerate.

However, we urge the Commission to recognize that these are nascent industries, which depend in large part on services that have not yet been developed, let alone offered to consumers. To the extent that there is any *consumer demand for equipment ownership*, it will follow, not precede *consumer demand for services*. And, if network operators are hamstrung by regulation in offering those services, the consumer option to own equipment is likely to be retarded, not advanced. In order to remain sensitive to market forces, the

Commission is best served, as it goes forward, by reliance on private, standards-setting bodies and by a liberal use of waiver authority for these new services.

Finally, it is difficult to overstate the requirement, included in Section 304 of the 1996 Act, that the security of these systems be protected. Just as there will be no equipment market, retail or lease, if there are no services, there will be no services without the ability of network operators to prevent their theft.

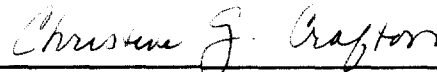
V. Conclusion

For the foregoing reasons, General Instrument Corporation respectfully urges to Commission to refrain from enacting rules which would hamper the rollout of digital technology and advanced services by video providers. The increasing presence of digital technology and broadband networks means video programming providers will soon compete on their ability to offer a large number of video channels as well as ancillary services such as high-speed data transport. Thus, present competition in the market for the delivery of video programming is in no small part due to technological advances which have made

the delivery of video and other data services a promising business venture for both incumbent cable operators and their newfound competitors.

Respectfully submitted,

GENERAL INSTRUMENT CORPORATION

A handwritten signature in cursive script, reading "Christine G. Crafton", positioned above a horizontal line.

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